

Effect of River Runoff and Surface Salinity Flux on the Circulation and Salinity Distribution at East Asian Marginal Seas

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The effect of fresh water runoff from river and the surface salinity flux on the circulation and the salinity distribution at the East Asian marginal seas are studied applying numerical ocean model. The model covers entire East Asian Seas and the West Pacific Ocean. At the eastern open boundary the model is coupled to a North Pacific Ocean Model. The areas of focus of this study are the Sea of Japan, the Yellow/East China Seas and the South China Sea.

Four parallel experiments with/without river runoff and with/ without surface salinity flux are conducted. For each experiment the model is started from the same initial conditions and with the same wind/heat forcing. Effects of the river runoff and surface salinity flux are evaluated based on the model inter-comparisons and on the comparisons to the observations.

In the Sea of Japan, the effect of river runoff is found to be minimal. On the other hand, the effect of river runoff is significant in the Yellow/East China Seas with a large river discharge. In the South China Sea, the effect from both river runoff and sea surface salinity flux are found to be important.